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| EXAMINER |
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STEVENS, BRIAN J

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| ART UNIT | PAPER NUMBER |
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2611

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12/15/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/591,542 | Applicant(s) RAZZELL, CHARLES | |
| | Examiner Brian J. Stevens | Art Unit 2611 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-16 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 16 is/are allowed.
- 7) ☒ Claim(s) 1-4,6,11 and 12 is/are rejected.
- 8) ☒ Claim(s) 5,7-10 and 13-15 is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 01 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. This communication is in response to Application No. 10/591,542 filed on September 1st, 2006. The amendment presented on October 4th, 2011 which provides changes to claim 1 is hereby acknowledged. Claims 1-16 remain pending.

Response to Arguments

2. Acknowledgement of the drawings in response to the objection has been considered. The previously raised objection is hereby withdrawn.

3. Acknowledgement of the specification in response to the objection has been considered. The previously raised objection is hereby withdrawn.

4. Applicant's arguments, see remarks, filed October 4th, 2011, with respect to the rejection(s) of claim(s) 1, 6 and 11 (and their respective string of dependencies) under 35 U.C.S. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of US 6,049,584 by Pfeiffer.

Allowable Subject Matter

5. Claim 16 is allowed.

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6. Claims 5, 7-10 and 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 6, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2004/0166799 A1 by Kral in view of US 2004/0120424 A1 by Roberts, in further view of US 6,049,584 by Pfeiffer.

9. Regarding claim 1, Kral teaches the knowledge of a method of synchronizing to an ultra-wideband signal and receiving a sequence keyed, ultra wideband symbol, comprising:

a) operating a first plurality of oscillators (See Figure 5B, [318A] and [318A]), and each one of the first plurality of oscillators selectively coupled (See Paragraph [0071], “where one VCO 318 is selected based on the desired frequency for the I and Q LO signals 206a,b”); to a respective one of a plurality of parallel receiver paths (See Claim 12, “a receiver, comprising: generating a plurality of local oscillator signals” and “outputting said plurality of local oscillator signals to a plurality of corresponding

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amplifiers; enabling one of said amplifiers to select one of said local oscillator signals for tuning said receiver,")

b) maintaining a second plurality (See Figure 5B, [318C] and [318D] of oscillators in a non-operational low-power state (See Paragraph [0072], "The loop filter 320 generate a voltage according to the charge pump current 321, which tunes the frequency of the selected VCO 318 to remove any frequency and/or phase difference between the output 313 and the reference signal 325", thus in a non-operation state based upon the charge pump);

b) maintaining the plurality of parallel receiver paths (See Figure 5B); but does not teach wherein the symbol is partially serialized

c) determining based at least in part upon an output of each of the plurality of parallel receiver paths, whether a synchronization sequence has been received;

d) receiving a first portion of a partially serialized, sequence keyed, ultra wideband symbol;

e) operating if the determination of c) is affirmative, a second plurality of oscillators and

g) receiving a second portion of the partially serialized, sequence keyed, ultra wideband symbol.

Kral further teaches f) selectively coupling each one of the second plurality of oscillators(See Paragraph [0071], "where one VCO 318 is selected based on the desired frequency for the I and Q LO signals 206a,b") to a respective one of the plurality of parallel receiver paths (See Claim 12, "a receiver, comprising: generating a plurality

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of local oscillator signals” and “outputting said plurality of local oscillator signals to a plurality of corresponding amplifiers; enabling one of said amplifiers to select one of said local oscillator signals for tuning said receiver,”).

Roberts teaches the knowledge of c) determining based at least in part upon an output of each of the plurality of parallel receiver paths, whether a synchronization sequence has been received (See Paragraph [0360], “The receiver 1520, 1720 correlates the received code word with k possible code words to generate 1.sup.st through k.sup.th correlation values (Step 2030), and then compares the 1.sup.st through k.sup.th correlation values to determine the b-bit data sequence that the received code word represents”);

d) receiving a first portion of a partially serialized, sequence keyed, ultra wideband symbol (See Paragraph [0002], “The present invention relates to ultrawide bandwidth (UWB) transmitters, receivers and transmission schemes. More particularly, the present invention relates to a method and system for sending data across a UWB signal using M-ary bi-orthogonal keying.”)

e) operating if the determination of c) is affirmative, a second plurality of oscillators (Claim scope is not limited by claim languages that makes optional but does not require steps to be performed, or by claim language that does not limit a claim to a particular structure, See MPEP 2111.04) and

g) receiving a second portion of the partially serialized, sequence keyed, ultra wideband symbol (See Paragraph [0002], “The present invention relates to ultrawide bandwidth (UWB) transmitters, receivers and transmission schemes. More particularly,

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the present invention relates to a method and system for sending data across a UWB signal using M-ary i-orthogonal keying.”).

Pfeiffer teaches wherein the received data is partially serialized (See Column 3, Lines 38-44, specifically “the output of the ten TDI zones can be partially serialized on the CCD chip, according to which data transmission is desired on a line”).

10. It would have been obvious to one of ordinary skill in the art, having the teachings of Kral, Roberts and Pfeiffer before them at the time the invention was made to modify the teachings of Kral to further include determining based at least in part upon an output of each of the plurality of parallel receiver paths, whether a synchronization sequence has been received; receiving a first portion of a partially serialized, sequence keyed, ultra wideband symbol; operating if the determination of is affirmative, a second plurality of oscillators and receiving a second portion of the partially serialized, sequence keyed, ultra wideband symbol. There are a finite amount of signals a receiver can receive and one skilled in the art would be motivated to try uses UWB signals and rather than relying on the oscillators constantly running, one would be motivated to determine when and which oscillators would run based upon a trigger such as a synchronization sequence. The method of synchronizing a symbol would not be altered by the fact of having the incoming symbol be partially serialized, therefore one skilled in the art would be motivated to try using a particular type of incoming symbol. One of ordinary skill in the art would therefore have been motivated to make the modification to further include determining based at least in part upon an output of each of the plurality of parallel receiver paths, whether a synchronization sequence has been received;

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receiving a first portion of a partially serialized, sequence keyed, ultra wideband symbol; operating if the determination of is affirmative, a second plurality of oscillators and receiving a second portion of the partially serialized, sequence keyed, ultra wideband symbol.

11. Regarding claim 2, Kral together with Roberts and Pfeiffer taught the method of claim 1, as described above. Kral further teaches wherein each of the plurality of receiver paths receives an in-phase and quadrature version of the outputs of the oscillators coupled thereto (See Paragraph [0017], “the integrated tuner is configured for in-phase (I) and quadrature (Q) operation. Therefore, the LO generation circuit generates I and Q differential LO signals. Furthermore, the differential direct conversion mixer includes I and Q mixers that generate corresponding I and Q baseband signals. The I and Q baseband signals are received by corresponding first and second tunable low pass filters, and corresponding first and second DC compensation circuits”), is well known in the art.

12. Regarding claim 6, Kral together with Roberts and Pfeiffer taught the method of claim 1, as described above, the same rationale of rejections is applicable, wherein the method steps further comprise the modules for performing respective function/steps discussed therein; the same rationale of rejections is applicable.

13. Regarding claim 11, Kral together with Roberts and Pfeiffer taught the method of claim 1, as described above, the same rationale of rejections is applicable, wherein the receiver further comprises the modules for performing respective function/steps discussed therein; the same rationale of rejections is applicable.

14. Regarding claim 12, Kral together with Roberts and Pfeiffer taught the receiver of claim 11, as described above. Kral further teaches wherein each receiver path further comprises a pair of analog-to-digital converters (See Paragraph [0132], "Control signal 1706 can be a digital signal so as to select one or more of the individual resistors in each respective resistor bank. In order to produce a digital control signal 1706, the analog-to-digital converter 1730 can comprise a comparator 1712 coupled to a SAR 1714."), is well known in the art.

15. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2004/0166799 A1 by Kral in view of US 2004/0120424 A1 by Roberts, in further view of US 6,049,584 by Pfeiffer, in further view of US 2002/0089804 A1 by Chea, JR.

16. Regarding claim 3, Kral together with Roberts and Pfeiffer taught the method of claim 1, as described above, but do not teach wherein the non-operational low-power state comprises a de-energized state.

Chea further teaches wherein the non-operational low-power state comprises a de-energized state (See Paragraph [0041], "the signal Q is a logical 1, the relay driver 207 will energize the relay K.sub.p 208. On the other hand, if the detected signal

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produces a logical 0 at the latch F1 206 output, the relay K.sub.p 208 remains in its de-energized state”), is well known in the art.

17. It would have been obvious to one of ordinary skill in the art, having the teachings of Kral, Roberts, Pfeiffer and Chea before them at the time the invention was made to modify the teachings of Kral, Roberts and Pfeiffer to further wherein the non-operational low-power state comprises a de-energized state. There are finite amount of non-operational low-power states and one would be motivated to try having a de-energized state. One of ordinary skill in the art would therefore have been motivated to make the modification to further include wherein the non-operational low-power state comprises a de-energized state.

18. Regarding claim 4, Kral together with Roberts and Pfeiffer taught the method of claim 1, as described above, but do not teach wherein the non-operational low-power state comprises an energized, non-switching state.

Chea further teaches wherein the non-operational low-power state comprises an energized, non-switching state (See Paragraph [0002], “The present invention relates to systems and methods for protecting devices (switching and non-switching) such as micro electro-mechanical system (MEMS) and electronic relay devices in telecommunication systems”), is well known in the art.

19. It would have been obvious to one of ordinary skill in the art, having the teachings of Kral, Roberts, Pfeiffer and Chea before them at the time the invention was made to modify the teachings of Kral, Roberts and Pfeiffer to further wherein the non-

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operational low-power state comprises an energized, non-switching state. There are finite amount of non-operational low-power states and one would be motivated to try having energized, non-switching state. One of ordinary skill in the art would therefore have been motivated to make the modification to further include wherein the non-operational low-power state comprises an energized, non-switching state.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Stevens whose telephone number is (571)270-3623. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/BS/
/Brian J. Stevens/

/David C. Payne/

Supervisory Patent Examiner, Art Unit 2611